

| Form PTO-1449<br>COMMERCE<br>(REV. 7-80)   |    | U.S. DEPARTMENT OF<br>PATENT AND TRADEMARK OFFICE |   | Atty. Docket No.<br>US 000160 |   | Serial No. |   |   |         |                         |         |       |           |                        |    |
|--|----|---|---|-------------------------------|---|------------|---|---|---------|-------------------------|---------|-------|-----------|------------------------|----|
| <b>INFORMATION DISCLOSURE CITATION</b><br>(Use several sheets if necessary)  |    |   |   | Applicant<br>DAGNACHEW BIRRU  |   | Group      |   |   |         |                         |         |       |           |                        |    |
|  |    |   |   | Filing Date<br>CONCURRENTLY   |   |            |   |   |         |                         |         |       |           |                        |    |
| <b>U.S. PATENT DOCUMENTS</b>   |    |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
| Ex. Int  |    | Document Number                                   |   |                               |   |            |   |   |         | Date                    | Name    | Class | Sub-class | Filing Date If Approp. |    |
| H.V.   | AA | 5   | 2 | 4                             | 7 | 5          | 4 | 1 | 9/21/93 | NAKAI                   | 375     | 14    | 4/23/92   |                        |    |
| H.V.   | AB | 5   | 2 | 9                             | 3 | 4          | 0 | 2 | 3/8/94  | CRESPO ET AL            | 375     | 14    | 5/2/91    |                        |    |
| H.V.   | AC | 5   | 3 | 0                             | 3 | 2          | 6 | 3 | 4/12/94 | SHOJI ET AL             | 375     | 11    | 6/24/92   |                        |    |
| H.V.   | AD | 5   | 7 | 7                             | 9 | 0          | 4 | 7 | 7/14/98 | DARRAH                  | 206     | 373   | 3/25/97   |                        |    |
| H.V.   | AE |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
| <b>FOREIGN PATENT DOCUMENTS</b>  |    |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
|  |    | Document Number                                   |   |                               |   |            |   |   |         | Date                    | Country | Class | Sub-class | Trans.                 |    |
|  |    |   |   |                               |   |            |   |   |         |                         |         |       |           | Yes                    | no |
| H.V.   | AF | 0   | 3 | 6                             | 3 | 5          | 5 | 1 | B 1     | 12/7/94                 | EUROPE  |       |           |                        | X  |
| H.V.   | AG | 0   | 9 | 6                             | 7 | 7          | 6 | 3 | A 1     | 12/29/99                | EUROPE  |       |           |                        | X  |
|  | AH |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
|  | AI |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
| OTHER (Including Author, Title, Date, Pertinent Pages, Etc.)   |    |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
|  | AJ |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
|  | AK |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
|  | AL |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
|  | AM |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |
| Examiner <i>[Signature]</i>  |    |   |   |                               |   |            |   |   |         | Date Considered 8/19/04 |         |       |           |                        |    |
| <b>*EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP<br>Draw line through citation if not in conformance and not considered. Include a copy<br>this form with next communication to applicant. |    |   |   |                               |   |            |   |   |         |                         |         |       |           |                        |    |

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| Form PTO-1449<br>COMMERCE<br>(REV. 7-80)   |    | U.S. DEPARTMENT OF<br>PATENT AND TRADEMARK OFFICE   |         | Atty. Docket No.<br>US 000160 |       | Serial No.<br>09/840,200 |                        |
| <div style="border: 2px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> <b>IP</b><br/> <b>AUG 01 2002</b><br/> <b>US 000160</b> </div>  |    |   |         | Applicant<br>Dagnachew Birru  |       |                          |                        |
|  |    |   |         | Filing Date<br>April 23, 2001 |       | Group<br>2614            |                        |
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| <b>U.S. PATENT DOCUMENTS</b>   |    |   |         |                               |       |                          |                        |
| Ex. Int  | AA | Document Number   | Date    | Name                          | Class | Sub-class                | Filing Date If Approp. |
|  | AA |   |         |                               |       |                          |                        |
|  | AB |   |         |                               |       |                          |                        |
|  | AC |   |         |                               |       |                          |                        |
|  | AD |   |         |                               |       |                          |                        |
|  | AE |   |         |                               |       |                          |                        |
| <b>FOREIGN PATENT DOCUMENTS</b>  |    |   |         |                               |       |                          |                        |
|  |    | Document Number   | Date    | Country                       | Class | Sub-class                | Trans. Yes no          |
|  | AF | 0 0 1 6 5 2 6 A 1   | 3/23/00 | World                         |       |                          | X                      |
|  | AG |   |         |                               |       |                          |                        |
|  | AH |   |         |                               |       |                          |                        |
|  | AI |   |         |                               |       |                          |                        |
|  | AJ |   |         |                               |       |                          |                        |
|  | AK |   |         |                               |       |                          |                        |
| OTHER (Including Author, Title, Date, Pertinent Pages, Etc.)   |    |   |         |                               |       |                          |                        |
|  | AL | "A Modified p-Weighted Normalized Frequency-Domain LMS Algorithm", by Harihar S. Punjabi et al., Pages 232-236. XP000488549   |         |                               |       |                          |                        |
|  | AM | "Adaptive Frequency-Domain Equalization and Diversity Combining for Broadband Wireless Communications", by Martin V. Clark, pages 409-413.  |         |                               |       |                          |                        |
|  | AN | "Degradation of Multicarrier and Single Carrier Transmission with Frequency Domain Equalization due to Pilot-Aided Channel Estimation and Frequency Synchronization", by Andreas Csywik, pages 27-31. |         |                               |       |                          |                        |
| Examiner   |    |   |         | Date Considered               |       |                          |                        |
| <i>[Signature]</i>   |    |   |         | <i>8/19/04</i>                |       |                          |                        |
| <b>*EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to applicant. |    |   |         |                               |       |                          |                        |

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